

Remarks

In the present paper, claims 1, 3, 4, 5, 7, 8, 9, 12, 16, 21, 24 and 26 have been amended. Claims 2, 6 and 21 have been canceled. No new matter is believed to have been added. Support for the amendments herein can be found throughout the specification, for example, on page 9, lines 24-28; page 10, lines 2-7; page 10, lines 19-27; page 11, lines 3-9.

35 U.S.C. §101

Claim 26 stands rejected under 35 U.S.C. §101 as being unpatentable. In particular, the Examiner asserts that the specification defines a computer readable medium as including an signals, which are currently not considered patent eligible subject matter by the U.S.P.T.O. The applicants respectfully submit that in the preliminary amendment filed July 02, 2008, the specification was amended to remove reference to transmission media with reference to a computer readable medium. As the applicants have already canceled the inclusion of transmission media from the definition of computer readable medium, the applicants respectfully request that the rejection be withdrawn. If for some reason, the amendment to the specification was not entered, the applicants will take such steps as necessary to remove the recitation of transmission media from the definition of computer readable medium in the specification.

Claims 21 and 27 were also rejected under 35 U.S.C. §101 by virtue of being dependent upon base claim 26. However, as noted above, the specification was amended to remove reference to transmission media.

In view of the clarifying comments and amendments herein, the applicants respectfully request that the rejection under 35 U.S.C. §101, of claims 21, 26 and 27, be withdrawn.

Claim Objection

Claim 16 was objected to for depending from a base claim that was canceled in the preliminary amendment. The applicants respectfully submit that claim 16 has been amended herein to correct claim dependency and to reflect proper antecedent basis for its claimed elements. In view of the clarifying comments and amendments herein, the applicants respectfully request that the objection to claim 16 be withdrawn.

35 U.S.C. §103

Claims 1-10, 12-16, 18, 21 and 23-27 stand rejected under 35 U.S.C. §103(a) as being obvious over E.P. 1, 229,685 to Lam et al. (hereinafter, '*Lam*') in view of U.S. Pat. No. 6,611,867 to Bowman-Amuah (hereinafter '*Bowman*'). The applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103 *as amended herein*.

According to the M.P.E.P. §706.02(j), to establish a *prima facie* case of obviousness, the prior art reference must teach or suggest all the claim limitations. It is the applicants' position that the art does not support the rejections to the claims *as amended herein*, thus a *prima facie* case of obviousness has not been established. Accordingly, the applicants respectfully request that the rejections are withdrawn.

With respect to claim 1, *as amended herein*, *Lam* and *Bowman* even when taken as a whole, fail to teach or suggest at least:

A method of monitoring compliance with a service level agreement... comprising:

... associating a plurality of service level objectives with a resource...

... automatically determining a critical service level objective from the plurality of service level objectives as being the service level objective that the resource is closest to failing to comply with and determining for that critical service level objective, a measure of how close the resource is to non-compliance ... if at least one of the early warning threshold values has been breached; and

... generating an early warning notification ... wherein the early warning notification identifies at least the critical service level objective and conveys the measure of how close the resource is to non-compliance of the critical service level objective.

By way of illustration, and not by way of limitation, in the claimed invention, both a critical service level object and a measure of how close the critical service level object is to being breached are determined and conveyed. This allows, for example, corrective action to bring the resource into compliance in a prioritized manner that reduces and/or minimizes the number of compliance failures resulting from the resource. Thus, for example, if a number of early warning thresholds are exceeded for a given resource, the number of early warning notifications that are actually conveyed is reduced to the most critical. Moreover, the network analysts know how long before it is anticipated that those service objects will be breached. If those critical service objects are eventually breached, a new notification may be generated that identifies the next most critical service object(s) and the time to failure for those (new) critical service objects. This process can continue until the resource becomes available, or until all service objects are breached.

Lam discloses a system that includes a service level agreement manager that monitors service level agreements for one or more users¹. To monitor service level agreements, performance metrics are gathered from probes located across a network, and these gathered metrics are compared against service level agreement profiles (SLA profiles). In this regard, the SLA profiles are user-created profiles that define, from a user perspective, the performance objectives that are of interest to that user/service level agreement². Each SLA profile specifies one or more SLA rules that determine whether to trigger an action, e.g., based upon the gathered performance metrics data³.

Bowman discloses a proactive threshold manager that executes on a hybrid telecommunications network to forewarn a service provider if a service level agreement to maintain a certain level of service is in danger of being breached by monitoring thresholds established for the telecommunications network. Thresholds may be specified for example, to

¹ See for example, *Lam*, paragraph 017, 46

² See for example, *Lam*, paragraphs 007, 016

³ See for example, *Lam*, paragraph 33

include the time of day, the day of the week, the number of short-duration calls, long-duration calls, cumulative minutes, etc⁴.

However, even assuming *arguendo* that the references are combinable and considered as a whole, the applicants respectfully submit that *Lam* and *Bowman* fail to teach or suggest that claimed, *as amended herein*. As claimed, a single resource has associated with it, a plurality of different service level objectives. For example, a plurality of different users may have different service level contracts with a service provider, which may all rely on the same resource. As claimed, for each service level objective associated with that resource, two thresholds are determined, including an early warning threshold and a threshold for failure to meet the associated service level objective.

Moreover, as claimed, if the early warning threshold is breached for one or more of the service level objects, then a critical service level objective is automatically determined from the plurality of service level objectives as being the service level objective that the resource is closest to failing to comply with. Moreover, a measure is made for that critical service level objective, as to how close the resource is to non-compliance based upon the associated threshold for failure value of the critical service level objective.

However, as noted by the Examiner, *Lam* does not teach the use of two thresholds for each service level object, including an early warning threshold and a threshold for failure to meet the associated service level objective⁵. Moreover, there is no teaching or suggestion in *Lam* that any sort of process attempts to single out a service level object as being a critical service level object that is the closest to being breached and to provide measure of how close the critical service level object is to being breached by the associated resource.

In *Bowman*, alarms may be triggered that enable detection of a violation before the actual breach of a corresponding service level agreement. However, in *Bowman*, threshold

⁴ See for example, *Lam*, paragraph 38

values are selected for a number of monitored conditions, such as the number of telephone calls that the network handles in a certain time of day or day of the week, the number of short-duration calls, long-duration calls, cumulative minutes, etc. Based upon the enumerated conditions, a count is made as to how many times the threshold value is exceeded for each monitored conditions. In this regard, a priority value may be computed by multiplying each threshold by the number of times that threshold has been exceeded.

Regardless, an analyst is required to investigate the threshold data updated in response to detecting an alarm. Based upon the number of threshold violations, if the analyst suspects a breach of an associated service level agreement, the analyst notifies the service provider. The analyst may also be able to suggest appropriate actions to stop a suspected breach.

Even when combining *Lam* and *Bowman* as a whole, there is no teaching or suggestion of automatically determining a critical service level objective from the plurality of service level objectives as being the service level objective that the resource is closest to failing to comply with. For example, in *Lam*, there is no teaching or suggestion of using a warning threshold to identify service level objects before they are breached. In *Bowman*, the system merely counts the number of times that a threshold is exceeded. An analyst is then required to review the threshold data and to draw conclusions as to whether there is a likelihood of breach. Moreover, in *Bowman*, certain thresholds may be prioritized, e.g., by virtue of the number of times that a corresponding threshold is exceeded. Regardless, there is no teaching or suggestion that such prioritized conditions are automatically determined as being critical service level objectives. To the contrary, *Bowman* specifically leaves such decisions up to the analyst.

Still further, even when combining *Lam* and *Bowman* as a whole, there is no teaching or suggestion of determining a measure of how close the critical service level object is to be being breached by the associated resource. Rather, both references are completely silent with

⁵ See the Office action, page 5.

regard to, and fail to teach or suggest this claimed element. A recitation similar to this element was recited in claim 2, now canceled. In rejecting that claim, the Examiner cites *Bowman*, at Col. 56, lines 54-59. The applicants respectfully submit that *Bowman* does not teach that which is recited in the claims.

In the cited passage, *Bowman* teaches a system of monitoring with reference to Fig. 16A, wherein a predetermined range is identified with respect to a minimum level of service (box 1610). The current level of service is sensed and is compared to the minimum level of service (boxes 1606 and 1608). If the current level of service is within the predetermined range, an “indication” is provided. *Bowman* teaches that the threshold is *preferably* chosen such that the service provider is allowed enough time to cure the service level problem before the minimum service level is reached and the subscriber's service level agreement breached. However, *Bowman* is silent with regard to what the “indication” is. Regardless, determining whether a current level of service is within a range of thresholds fails to teach or suggest specifying for a critical object, a measure of how close the critical service level object is to be being breached by the associated resource.

In view of the amendments and clarifying comments herein, the applicants respectfully request that the rejection of claim 1 under 35 U.S.C. §103(a), and the claims that depend there from, be withdrawn.

With specific regard to dependent claims 12-16 and 23, even when combining *Lam* and *Bowman* as a whole, the references are completely silent with regard to and fail to teach or suggest determining a maximum down time (MADT) for a resource to comply with the service level agreement, determining an early warning threshold (ewdt) based on the maximum down time, monitoring accumulated down time (A) for the resource since a beginning of a compliance period associated with the service level agreement, determining if the accumulated down time for the resource exceeds the early warning threshold and

generating an early warning notification if the accumulated down time of the resource exceeds the early warning threshold (claim 23).

Lam and *Bowman* as a whole, are completely silent with regard to and fail to teach or suggest accumulating down time, and generating a notification that includes a remaining time before the accumulated down time of the resource exceeds the maximum down time (claim 12). *Lam* and *Bowman* as a whole, are also completely silent with regard to and fail to teach or suggest receiving notification that the resource is down and incrementing the accumulated down time while the resource is down (Claim 13).

Lam and *Bowman* as a whole, are completely silent with regard to and fail to teach or suggest periodically polling a resource to determine the accumulated down time of the resource (claim 14) and polling a resource information data source to determine the accumulated down time of the resource (claim 15).

Lam and *Bowman* as a whole, are completely silent with regard to and fail to teach or suggest determining if the accumulated down time for the resource exceeds a minimum early warning threshold of the early warning thresholds for the plurality of service level agreements and generating an early warning notification if the accumulated down time of the resource exceeds the minimum early warning threshold (claim 16).

Claims 24 and 26 recite elements similar to those set out with reference to Fig. 1 discussed above. As such, the arguments for those claims apply by analogy.

In view of the amendments and clarifying comments herein, the applicants respectfully request that the rejections of claims 24 and 26 under 35 U.S.C. §103(a), and the claims that depend there from, be withdrawn.

Conclusion

For all of the above reasons, the applicants respectfully submit that the above claims recite allowable subject matter. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,
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